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=> polyacrylic acid or polyvinyl alcohol

18285 POLYACRYLIC  
425279 ACID  
13400 POLYACRYLIC ACID  
(POLYACRYLIC(W)ACID)  
108095 POLYVINYL  
219310 ALCOHOL  
41413 POLYVINYL ALCOHOL  
(POLYVINYL(W)ALCOHOL)  
L1 48280 POLYACRYLIC ACID OR POLYVINYL ALCOHOL

=> sodium hydroxide or chitosan or chitin

303968 SODIUM  
176800 HYDROXIDE  
115672 SODIUM HYDROXIDE  
(SODIUM(W)HYDROXIDE)  
1774 CHITOSAN  
2066 CHITIN  
L2 117756 SODIUM HYDROXIDE OR CHITOSAN OR CHITIN

=> 11 and 12

L3 14546 L1 AND L2

=> 11(P)12

L4 1525 L1(P)L2

=> 14 and 525/61/clas

0 525/61/CLAS  
L5 0 L4 AND 525/61/CLAS

=> 14 and 525/61/cclst

1109 525/61/CCLST  
L6 32 L4 AND 525/61/CCLST

=> d 16 1-32 cit ab

1. 5,717,044, Feb. 10, 1998, Suspending agent for suspension polymerization of vinyl compound; Shigeki Takada, 526/202; 524/459, 503; 525/61 [IMAGE AVAILABLE]

US PAT NO: 5,717,044 [IMAGE AVAILABLE]

L6: 1 of 32

**ABSTRACT:**

A vinyl compound is polymerized under suspension polymerization conditions by polymerizing the vinyl compound in a suspension polymerization medium containing, as the suspending agent, from 0.02 to 0.2 parts by weight of a polyvinyl alcohol polymer (A) having a degree of hydrolysis ranging from 60 to 95 mol % and a terminal mercapto group, based on 100 parts by weight of the vinyl compound. In another aspect of the invention, the suspending agent is a combination of said polyvinyl

alcohol polymer (A) and a polyvinyl ester (B) having a degree of hydrolysis less than 60 mol %. The weight ratio of the two polymeric suspending agents (A)/(B) ranges from 40/60 to 95/5.

2. 5,629,378, May 13, 1997, Suspending agent for suspension polymerization of vinyl compound; Shigeki Takada, 525/57, 61 [IMAGE AVAILABLE]

US PAT NO: 5,629,378 [IMAGE AVAILABLE]

L6: 2 of 32

**ABSTRACT:**

The present invention is to provide a suspending agent for suspension polymerization of a vinyl compound which comprises a polyvinyl alcohol polymer (A) having a degree of hydrolysis of at least 60 mol % and a mercapto group at an end thereof; and furthermore a suspending agent for suspension polymerization of a vinyl compound which comprises a polyvinyl alcohol polymer (A) having a degree of hydrolysis of at least 60 mol % and a mercapto group at an end thereof and a polyvinyl ester polymer (B) having a degree of hydrolysis of less than 60 mol %, weight ratio of component (A)/component (B) being 40/60 to 95/5.

The suspending agent for suspension polymerization of a vinyl compound of the present invention has an excellent less-foaming effect and an effect of giving uniform and porous vinyl polymer granules.

3. 5,583,163, Dec. 10, 1996, Photocrosslinked polymers; Beat Muller, 522/152, 154; 523/106, 108; 525/58, 59, 60, 61 [IMAGE AVAILABLE]

US PAT NO: 5,583,163 [IMAGE AVAILABLE]

L6: 3 of 32

**ABSTRACT:**

The invention relates to a novel process for the manufacture of mouldings, especially contact lenses, in which a soluble prepolymer comprising crosslinkable groups is cross-linked in solution, and also to mouldings, especially contact lenses, obtainable in accordance with that process. The present invention relates also to novel prepolymers that can be used in the process according to the invention, especially derivatives of a polyvinyl alcohol having a molecular weight of at least about 2000 that, based on the number of hydroxy groups of the polyvinyl alcohol, comprise from approximately 0.5 to approximately 80% of units of formula I ##STR1## wherein R is lower alkylene having up to 8 carbon atoms,

R.sup.1 is hydrogen or lower alkyl and

R.sup.2 is an olefinically unsaturated, electron-attracting, copolymerisable radical preferably having up to 25 carbon atoms, to crosslinked polymers, either homo- or co-polymers of those novel prepolymers, to processes for the preparation of the novel prepolymers and the homo- and co-polymers obtainable therefrom, to mouldings made from the said homo- or co-polymers, especially contact lenses made from those homo- or co-polymers, and to processes for the manufacture of contact lenses using the said homo- or co-polymers.

4. 5,508,317, Apr. 16, 1996, Photocrosslinked polymers; Beat Muller, 522/85; 264/1.1; 522/84, 86; 523/106, 107, 108; 525/57, 59, 61, 937 [IMAGE AVAILABLE]

US PAT NO: 5,508,317 [IMAGE AVAILABLE]

L6: 4 of 32

**ABSTRACT:**

The invention relates to a novel process for the manufacture of mouldings, especially contact lenses, in which a soluble prepolymer comprising crosslinkable groups is crosslinked in solution, and also to mouldings, especially contact lenses, obtainable in accordance with that process. The present invention relates also to novel prepolymers that can be used in the process according to the invention, especially derivatives of a polyvinyl alcohol having a molecular weight of at least about 2000 that, based on the number of hydroxy groups of the polyvinyl alcohol,

comprise from approximately 0.5 to approximately 80% of units of formula I ##STR1## wherein R is lower alkylene having up to 8 carbon atoms, R.<sup>1</sup> is hydrogen or lower alkyl and R.<sup>2</sup> is an olefinically unsaturated, electron-attracting, copolymerisable radical preferably having up to 25 carbon atoms, to crosslinked polymers, either homo- or co-polymers of those novel prepolymers, to processes for the preparation of the novel prepolymers and the homo- and co-polymers obtainable therefrom, to mouldings made from the said homo- or co-polymers, especially contact lenses made from those homo- or co-polymers, and to processes for the manufacture of contact lenses using the said homo- or co-polymers.

5. 5,240,995, Aug. 31, 1993, Electrotransport adhesive; J. Richard Gyory, et al., 525/57; 524/52, 54, 57, 925; 525/58, 59, 61, 931, 937, 941; 604/20; 607/149 [IMAGE AVAILABLE]

US PAT NO: 5,240,995 [IMAGE AVAILABLE]

L6: 5 of 32

ABSTRACT:

A two phase adhesive matrix for use in an electrically powered iontophoretic delivery device is provided. The adhesive matrix comprises an adhesive hydrophobic polymer phase and about 15 to 60 wt % on a dry weight basis of a hydrophilic polymer phase distributed through the hydrophobic polymer phase. The hydrophilic phase forms upon hydration an interconnecting network of aqueous pathways for passage of the agent through the adhesive. The adhesive can be used to adhere an electrode assembly of an iontophoretic delivery device to a body surface such as skin or a mucosal membrane. Alternatively, the adhesive can be used to adhere together two or more elements of an iontophoretic delivery device.

6. 5,234,992, Aug. 10, 1993, Electrotransport adhesive; J. Richard Gyory, et al., 525/57; 524/47, 52, 54, 55, 925; 525/58, 59, 61, 931, 937, 941; 604/20 [IMAGE AVAILABLE]

US PAT NO: 5,234,992 [IMAGE AVAILABLE]

L6: 6 of 32

ABSTRACT:

An adhesive composition suitable for use as an in-line contact adhesive for electrotransport drug delivery systems.

7. 5,126,382, Jun. 30, 1992, Superabsorbent compositions and a process for preparing them; David H. Hollenberg, 524/56, 58, 377, 386; 525/57, 61 [IMAGE AVAILABLE]

US PAT NO: 5,126,382 [IMAGE AVAILABLE]

L6: 7 of 32

ABSTRACT:

Metal ion crosslinked superabsorbent polymers and a process for making them are described wherein high concentrations of polyhydroxylated materials are incorporated in order to reduce the sensitivity of the superabsorbent composition to solutions containing dissolved salts. Also provided is a process for forming crosslinked superabsorbents containing high solids polymer content.

8. 4,978,713, Dec. 18, 1990, Polyvinyl alcohol derivatives containing pendant vinylic monomer reaction product units bound through ether groups and hydrogel contact lenses made therefrom; Merrill Goldenberg, 525/61; 351/160R; 525/60 [IMAGE AVAILABLE]

US PAT NO: 4,978,713 [IMAGE AVAILABLE]

L6: 8 of 32

ABSTRACT:

A contact lens of a crosslinked, organic aprotic solvent insoluble, substantially transparent polymer of a derivative of a polyvinyl alcohol

having a weight average molecular weight of at least about 2,000, containing an effective amount between about 0.1 to 90 percent, based on the number of hydroxyl groups on said polyvinyl alcohol, of a crosslinked addition reaction product of units of the formula ##STR1## in the presence or absence of a polymerizable vinylic monomer wherein R.sub.1 is a divalent aliphatic, cycloaliphatic, arylene, aralkylene, alkarylene or heterocyclic group; A is --O--, --NH-- or ##STR2## where R" is hydrogen or lower alkyl and A' is a direct bond or A is a direct bond and A' is --O-- or --O--CH.sub.2 --; R.sub.2 is hydrogen or methyl; and R.sub.3 is hydrogen, methyl or --COOR.sub.4 where R.sub.4 is hydrogen or lower alkyl with the proviso that if R.sub.2 is methyl, R.sub.3 is hydrogen.

9. 4,970,253, Nov. 13, 1990, Thermoplastic plasticized polyvinylbutyral molding composition; Hans Dieter Hermann, et al., 524/296, 297, 314; 525/61 [IMAGE AVAILABLE]

US PAT NO: 4,970,253 [IMAGE AVAILABLE]

L6: 9 of 32

ABSTRACT:

Thermoplastic plasticized polyvinylbutyral molding compositions, in particular films of improved tensile strength and reduced tackiness are prepared by acetalization of polyvinyl alcohol, capable of association, in the associated state with n-butyraldehyde in aqueous phase in the presence of an acid catalyst and, if appropriate, of an organic sulfonic acid having an emulsifying action, after-treatment of the polyvinylbutyral under acetalization conditions at an elevated temperature in the presence of an organic sulfonic acid having 8 to 30 C atoms and having an emulsifying action, isolation and/or purification of the polyvinylbutyral and, if appropriate, admixture of conventional additives and mixing of the product, which may have been dried, with up to 40% by weight of plasticizer, relative to the polymer/plasticizer mixture, and molding, the plasticizers employed being esters of phthalic acid with C.sub.6 -C.sub.10 -alcohols and/or esters of adipic acid with C.sub.6 -C.sub.10 -alcohols.

Use of the films for the manufacture of laminated glass, and laminated glass containing the films as the joining layer.

10. 4,863,972, Sep. 5, 1989, Porous cross-linked polyvinyl alcohol particles, process for producing the same, and separating agent composed of the same; Takaharu Itagaki, et al., 521/141, 64, 525/61 [IMAGE AVAILABLE]

US PAT NO: 4,863,972 [IMAGE AVAILABLE]

L6: 10 of 32

ABSTRACT:

Porous cross-linked polyvinyl alcohol particles which is used for a chromatographic medium is prepared by: dispersing an aqueous solution of a mixture of polyvinyl alcohol and a salt in an organic solvent; allowing a gel to form spontaneously from the dispersion; and reacting the gel with a cross-linking agent.

11. 4,775,715, Oct. 4, 1988, Dry blending process for the quaternization of polyvinyl alcohol; Aleksander Beresniewicz, et al., 525/61, 359.3, 369, 374 [IMAGE AVAILABLE]

US PAT NO: 4,775,715 [IMAGE AVAILABLE]

L6: 11 of 32

ABSTRACT:

Cationic polyvinyl alcohol is prepared by blending polyvinyl alcohol under high shear conditions, at 0.degree.-100.degree. C., with a small amount of water, a small excess of base, and a quaternizing agent

containing a halohydrin radical and a quaternary ammonium group. The quaternization proceeds with acceptable conversions of about 35 to well over 50%. The quaternized polyvinyl alcohol has many applications, including use as a flocculating agent, as a stabilizing colloid, and in adhesive formulations.

12. 4,751,266, Jun. 14, 1988, Polyvinylbutyral of reduced tackiness and improved tensile strength; Hans D. Hermann, et al., 525/61 [IMAGE AVAILABLE]

US PAT NO: 4,751,266 [IMAGE AVAILABLE]

L6: 12 of 32

**ABSTRACT:**

Polyvinylbutyral of reduced tackiness and improved tensile strength is prepared by acetalization of polyvinyl alcohol, which is capable of association, in the associated state with n-butyraldehyde in aqueous phase in the presence of an acid catalyst. In the process for its preparation from more highly saponified, associated polyvinyl alcohol having a vinyl acetate unit content of less than 1% by weight, the acetalization is started preferably at temperatures below 20.degree. C. and the temperature is raised to above 40.degree. C. in the course of the reaction. Use for the production of plasticized thermoplastic polyvinylbutyral films and use of the latter as the joining layer in laminated glass.

13. 4,670,507, Jun. 2, 1987, Resin; John E. Walls, et al., 525/61; 430/175, 176 [IMAGE AVAILABLE]

US PAT NO: 4,670,507 [IMAGE AVAILABLE]

L6: 13 of 32

**ABSTRACT:**

This invention relates to a resin having the general formula

--A--B--C--

wherein a plurality of each of components A, B and C occur in ordered or random sequence in the resin and wherein A is present in said resin at about 5% to about 20% by weight and comprises groups of the formula ##STR1## B is present in said resin at about 4% to about 30% by weight and comprises groups of the formula ##STR2## and C is present in said resin at about 50% to about 91% by weight and comprises acetal groups consisting of groups of the formulae ##STR3## where R is lower alkyl or hydrogen, and wherein said group I is present in component C from about 75% to about 85%; group II is present in component C from about 3% to about 5%; and group III is present in component C from about 10% to about 22%.

14. 4,665,124, May 12, 1987, Resin; John E. Walls, et al., 525/61; 430/175, 176 [IMAGE AVAILABLE]

US PAT NO: 4,665,124 [IMAGE AVAILABLE]

L6: 14 of 32

**ABSTRACT:**

This invention relates to a resin having the general formula

--A--B--C--

wherein a plurality of each of components A, B and C occur in ordered or random sequence in the resin and wherein A is present in said resin at about 5% to about 20% by weight and comprises groups of the formula ##STR1## B is present in said resin at about 4% to about 30% by weight and comprises groups of the formula ##STR2## and C is present in said resin at about 50% to about 91% by weight and comprises acetal groups consisting of groups of the formulae ##STR3## where R is lower alkyl or hydrogen, and wherein said group I is present in component C from about 75% to about 85%; group II is present in component C from about 3% to about 5%; and group III is present in component C from about 10% to about

15. 4,598,122, Jul. 1, 1986, Polyoxirane crosslinked polyvinyl alcohol hydrogel contact lens; Merrill Goldenberg, 525/61; 523/106, 406, 409; 525/115, 118, 330.6, 385 [IMAGE AVAILABLE]

US PAT NO: 4,598,122 [IMAGE AVAILABLE]

L6: 15 of 32

ABSTRACT:

Optically clear soft contact lenses of a polyoxirane crosslinked polyvinyl alcohol having a weight average molecular weight of at least 8,000 and degree of hydrolysis of at least 93% and their preparation are disclosed. The materials are characterized by their ability to be boiling water sterilized, and their high water content, high oxygen permeability and high optical clarity.

16. RE 31,748, Nov. 27, 1984, Viscosifier and fluid loss control system; Jacob Block, 507/124, 903; 525/61 [IMAGE AVAILABLE]

US PAT NO: RE 31,748 [IMAGE AVAILABLE]

L6: 16 of 32

ABSTRACT:

A composition capable of imparting pseudoplasticity and fluid loss control properties to aqueous systems. The composition is formed from a combination of:

- (a) a hydroxy containing aluminum component and
- (b) a reaction product of a polyvinyl alcohol and at least 1 percent of stoichiometry of an aldehyde containing or generating agent. [.; wherein the amount of component (a) to component (b) is in the ratio of at least about 0.75:1.]..

The invention is further directed to improved drilling fluids containing said composition and to the process of drilling bore holes using said improved fluid.

17. 4,424,302, Jan. 3, 1984, Method of forming polymer particles; Jacob Block, et al., 525/58; 507/124, 903; 525/61; 536/88 [IMAGE AVAILABLE]

US PAT NO: 4,424,302 [IMAGE AVAILABLE]

L6: 17 of 32

ABSTRACT:

A process for forming polymeric particles from water-soluble polymers by introducing the polymer into an aqueous salt solution in which the salt is of a composition and present in an amount sufficient to inhibit solubilization of the polymer therein and subsequently introducing into the aqueous medium a multifunctional reagent and mixing said aqueous medium for a time and at a temperature sufficient to cause reaction between the polymer and the reagent. The resultant solid polymer is readily recovered.

18. 4,401,836, Aug. 30, 1983, Modified polyvinyl alcohol and its use as a sizing agent; Friedrich Engelhardt, et al., 525/61; 8/115.6, 115.7; 427/389.9 [IMAGE AVAILABLE]

US PAT NO: 4,401,836 [IMAGE AVAILABLE]

L6: 18 of 32

ABSTRACT:

Polyvinyl alcohol modified by reaction with formaldehyde and amidosulfonic acid at a pH value of 4 to 7, which value is established by the addition of an organic amine. This modified polyvinyl alcohol is suitable for use as a sizing agent for yarns.

19. 4,378,803, Apr. 5, 1983, Process for producing antithrombogenic vinyl acetate polymer or hydrolyzate thereof; Kunihiko Takagi, et al., 604/280; 424/78.18, 94.63, 423; 435/180, 181; 523/112; 524/21; 525/61; 623/66 [IMAGE AVAILABLE]

## ABSTRACT:

A process for producing an antithrombogenic vinyl acetate polymer or a hydrolyzate thereof which comprises treating the vinyl acetate polymer or hydrolyzate with a solution of a fibrinolytic enzyme so as to fix the fibrinolytic enzyme to the polymer. The resulting antithrombogenic vinyl acetate polymer or hydrolyzate is advantageously used in a material which comes into contact with the blood in use and is especially useful in a surgical tube.

20. 4,376,153, Mar. 8, 1983, Compositions comprising visco-elastic liquid compounds; Charles F. Cardy, 428/430, 441, 483; 524/503; 525/57, 61, 386; 528/354 [IMAGE AVAILABLE]

US PAT NO: 4,376,153 [IMAGE AVAILABLE]

L6: 20 of 32

## ABSTRACT:

Polyfunctional viscoelastic liquid compounds having molecular weights of at least 25,000 and preferably from 40,000 to 10 million comprise vinyl polymers having adducted thereon a plurality of groups, the same or different, the adducted groups having the general formula

--CO--(CR.<sub>sub.2</sub>).<sub>sub.z</sub>--O--.sub.n H  
wherein R represents a low molecular weight organic radical or, preferably, hydrogen, the total number of carbon atoms in all occurrences of R not exceeding 12, z represents a whole number from 4 to 8, preferably 5, and n represents on average, a number from, preferably, 0.5 to 300 per vinyl unit of the vinyl polymer. The compounds are soluble in a wide range of organic solvents and can find applications in adhesives, tackifiers, and fillers such as mastics, putties and like compositions.

21. 4,349,443, Sep. 14, 1982, Viscosifier and fluid loss control system; Jacob Block, 507/124; 525/61 [IMAGE AVAILABLE]

US PAT NO: 4,349,443 [IMAGE AVAILABLE]

L6: 21 of 32

## ABSTRACT:

A composition capable of imparting pseudoplasticity and fluid loss control properties to aqueous systems. The composition is formed from a combination of:

(a) a hydroxy containing aluminum component and  
(b) a reaction product of a polyvinyl alcohol and at least 1 percent of stoichiometry of an aldehyde containing or generating agent; wherein the amount of component (a) to component (b) is in the ratio of at least about 0.75:1.

The invention is further directed to improved drilling fluids containing said composition and to the process of drilling bore holes using said improved fluid.

22. 4,331,781, May 25, 1982, Process for the preparation of a polyvinyl alcohol complex compound in the presence of an organic boric acid derivative; Wolfgang Zimmermann, et.al., 525/61 [IMAGE AVAILABLE]

US PAT NO: 4,331,781 [IMAGE AVAILABLE]

L6: 22 of 32

## ABSTRACT:

With polybasic inorganic acids, for example boric acid, polyvinyl alcohol forms complex compounds, which, in the form of a gel, are suitable as adhesives. PVAL complex compounds are prepared in simple manner by subjecting to alcoholysis a polyvinyl ester in the presence of an organic boric acid derivative complexing agent. The reaction is carried out in alcoholic solution and the complexing agent should be soluble in alcohol. As starting material polyvinyl acetate is preferred, and methanol is

preferred as alcohol. The PVAL complex compounds prepared in this way are used, inter alia, as binders and thickening agents for coating substances.

23. 4,267,281, May 12, 1981, Controlled release pesticides; Charles L. McCormick, 525/61; 71/DIG.1; 424/78.18, 419; 504/116, 178, 229; 526/301; 536/2, 31, 45, 51, 55 [IMAGE AVAILABLE]

US PAT NO: 4,267,281 [IMAGE AVAILABLE]

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ABSTRACT:

Controlled release pesticides are prepared by reacting an isocyanate derivative of a pesticide with a polymer having pendant groups containing a reactive hydrogen to obtain a novel pesticide-polymer system in which the pesticide is chemically bonded to the polymer. Active pesticidal material is released from the pesticide-polymer system by hydrolysis or chemical depolymerization under conditions of use.

24. 4,048,416, Sep. 13, 1977, Thiopolymers, their derivatives and methods for their preparation and use; Rolf Erik Axel Verner Axen, et al., 525/61; 210/635; 435/178, 179, 181, 816; 525/54.1, 344, 350, 354; 526/238.1; 527/201, 203; 530/364, 408, 814, 816; 536/116, 120, 122 [IMAGE AVAILABLE]

US PAT NO: 4,048,416 [IMAGE AVAILABLE]

L6: 24 of 32

ABSTRACT:

A method for producing products for separation, ion exchange or as basic material for the preparation of various derivatives designed for separation purposes and adsorption purposes by means of a polymer being activated with a reagent containing at least two bifunctional groups so that at least one of the reactive, functional groups in each molecule is bonded to the polymer while leaving a considerable amount of remaining groups unreacted but still reactive so that the activated polymer can be caused to react with thiosulphate after surplus reagent has been eliminated. The invention also relates to the produced products or their derivatives consisting of a water-soluble hydroxyl group or amino group containing polymer substituted with organic side-chains, each containing one or more thiosulphate groups or derivatives of such groups and the use of the products for purification of water, separation, immobilization of enzymes, etc.

25. 4,012,352, Mar. 15, 1977, Polyvinyl alcohol microgels; Alden J. Deyrup, 524/557; 162/135; 525/61 [IMAGE AVAILABLE]

US PAT NO: 4,012,352 [IMAGE AVAILABLE]

L6: 25 of 32

ABSTRACT:

Polyvinyl alcohol microgels which comprise stable fluids comprising water and about 0.05 to 10% by weight of polyvinyl alcohol partially crosslinked with tetravalent titanium ions, said microgels being derived from polyvinyl alcohol which has a Hoepppler viscosity of about 4 to 150 centipoises and in which at least about 50 mole percent of the monomeric units are vinyl alcohol units, said partially crosslinked polyvinyl alcohol and water having a Brookfield viscosity of about 1.15 to 2000 centipoises, said viscosity being at least about 15% greater than the viscosity of the aqueous polyvinyl alcohol solution from which the microgel is derived, are useful as sizes for paper and paperboard, in paper and paperboard coatings, as warp sizes for textile fibers, as adhesives, and as soil and dust stabilizers.

26. 3,959,406, May 25, 1976, Polyelectrolyte composite of polyvinyl alcohol derivatives; Waichiro Tsuji, et al., 525/57, 60, 61, 916 [IMAGE AVAILABLE]

**ABSTRACT:**

A polyelectrolyte composite of polyvinyl alcohol derivatives; which comprises: an ionically bonded composite of a partial acetal of polyvinyl alcohol modified with diethoxyethyl trimethyl ammonium ion or a partial aminoacetal of polyvinyl alcohol modified with aminoacetal, with a carboxymethyl polyvinyl alcohol or a partial sulfate of polyvinyl alcohol.

27. 3,880,831, Apr. 29, 1975, Process of producing carbamoylalkyl derivatives of high molecular compounds; Ryoichi Senju, et al., 536/43; 525/61; 536/50, 53, 85, 88 [IMAGE AVAILABLE]

US PAT NO: 3,880,831 [IMAGE AVAILABLE]

L6: 27 of 32

**ABSTRACT:**

A carbamoylalkyl derivative of a high molecular compound is produced with a good yield and low cost by conducting the hydrolysis of a cyanoalkyl derivative of the high molecular compound with hydrogen peroxide in an alkaline state in the presence of iodine ions without accompanied by the reduction in the polymerization degree of the high molecular compound caused by the oxidative scission thereof by the action of nascent oxygen.

28. 3,852,100, Dec. 3, 1974, TREATMENT OF POROUS SURFACES OF ARTICLES OF MANUFACTURE; Perry A. Argabright, et al., 428/543; 525/61, 375 [IMAGE AVAILABLE]

US PAT NO: 3,852,100 [IMAGE AVAILABLE]

L6: 28 of 32

**ABSTRACT:**

Porous structures, e.g., concrete, wood, cinder block, ceramics, tiles, etc. are rendered less permeable by applying, e.g., spraying or painting to their surface, an aqueous solution having a pH substantially above 7 containing polyvinyl alcohol and a compound which contains polyisocyanurate salt groups, trisubstituted isocyanurate rings and end groups selected from: isocyanate, urethane, urea and amino groups.

29. 3,839,307, Oct. 1, 1974, PROCESS OF PRODUCING POLYVINYL ALCOHOL MICROGELS; John Joseph Schmifg, 525/61; 524/557; 525/60 [IMAGE AVAILABLE]

US PAT NO: 3,839,307 [IMAGE AVAILABLE]

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**ABSTRACT:**

Polyvinyl alcohol microgels which comprise stable fluids comprising water and about 0.05 to 10 percent by weight of polyvinyl alcohol partially crosslinked with tetravalent titanium ions, said microgels being derived from polyvinyl alcohol which has a Hoepppler viscosity of about 4 to 150 centipoises and in which at least about 50 mole percent of the monomeric units are vinyl alcohol units, said partially crosslinked polyvinyl alcohol and water having a Brookfield viscosity of about 1.15 to 2000 centipoises, said viscosity being at least about 15 percent greater than the viscosity of the aqueous polyvinyl alcohol solution from which the microgel is derived, are useful as sizes for paper and paperboard, in paper and paperboard coatings, as warp sizes for textile fibers, as adhesives, and as soil and dust stabilizers.

30. 3,656,884, Apr. 18, 1972, PROCESS FOR THE PREPARATION OF GRAFTED SOLID MATERIALS OF WATER-AFFINITIVE POLYMERS; Takuji Okaya, et al., 8/116.1, 129; 525/59, 61, 309, 426 [IMAGE AVAILABLE]

US PAT NO: 3,656,884 [IMAGE AVAILABLE]

L6: 30 of 32

**ABSTRACT:**

Process for the preparation of grafted solid materials of water-affinitive polymers such as polyvinyl alcohol, acetalized polyvinyl alcohol, polyamide, polyacrylonitrile and cellulose, which comprises immersing said solid material in an aqueous solution or suspension of an ester of acrylic acid or metacrylic acid at a temperature of 40.degree. - 120.degree. C., in the presence of 20 - 1,000 ppb of molecular oxygen, as a reaction initiating component, in the aqueous solution or suspension. In this way, the graft polymerization reaction is initiated smoothly and high reaction rate of the graft polymerization is obtained without the substantial formation of homopolymer of the ester in the liquid phase.

31. 3,640,734, Feb. 8, 1972, PREPARATION OF FIBROUS REINFORCED CASING FROM ALKALI SOLUBLE POLYVINYL ALCOHOL COPOLYMERS; Seymour Oppenheimer, et al., 138/118.1; 525/60, **61** [IMAGE AVAILABLE]

US PAT NO: 3,640,734 [IMAGE AVAILABLE]

L6: 31 of 32

ABSTRACT:

A novel fibrous casing for packaging sausages and other meat and food products comprises a saturating tissue, preferably a long fiber hemp paper, coated or impregnated with an insolubilized polyvinyl alcohol/polyvinyl ester copolymer. The casing is preferably prepared by coating or impregnating a saturating tissue with an aqueous alkaline solution of a polyvinyl alcohol/polyvinyl ester copolymer which is then insolubilized by treatment with acid and optionally by further treatment with a suitable cross-linking agent, viz formaldehyde, etc. The saturating tissue may be coated or impregnated with the polyvinyl alcohol copolymer solution and immediately formed into a tubular casing and the polyvinyl alcohol copolymer regenerated therein by acid treatment or may be coated or impregnated in sheet form, neutralized and dried and subsequently slit to size and formed into a tubular casing in a separate seaming operation. Casings are preferably formed using long fiber hemp paper as the saturating tissue and using polyvinyl alcohol copolymers having a D.S. of OH groups in the range from about 25-80 percent.

32. 3,637,394, Jan. 25, 1972, PHOTOGRAPHIC ELEMENTS CONTAINING SYNTHETIC POLYMERIC VEHICLES; Donald Arthur Smith, et al., 430/627, 628; **525/61** [IMAGE AVAILABLE]

US PAT NO: 3,637,394 [IMAGE AVAILABLE]

L6: 32 of 32

ABSTRACT:

Novel synthetic polymers derived from poly(vinyl alcohol) useful as hardenable gelatin replacements in compositions, photographic emulsions and elements, and a process for preparing said polymers are disclosed.

=> 14 and 524/clas

62916 524/CLAS  
L7 184 L4 AND 524/CLAS

=> 14 and 524/555/cclst

967 524/555/CCLST  
L8 6 L4 AND 524/555/CCLST

=> 14 and 524/540-560/cclst

5270 524/540-560/CCLST (21 TERMS)  
(524/540+NEXT20/CCLST)  
L9 31 L4 AND 524/540-560/CCLST

=> d 19 1-31 cit ab

1. 5,736,601, Apr. 7, 1998, Grinding and/or dispersing agent containing polymers and/or copolymers partially neutralized by magnesium for aqueous suspensions of mineral substances, to be used in pigmentary applications; Jean-Bernard Egraz, et al., 524/425; 51/293; **524/547, 556**; 525/329.5, 330.2, 361, 362 [IMAGE AVAILABLE]

US PAT NO: 5,736,601 [IMAGE AVAILABLE]

L9: 1 of 31

**ABSTRACT:**

A grinding agent containing polymers and/or copolymers partially neutralized by magnesium, for aqueous suspensions of mineral substances to be used in pigmentary applications is disclosed.

A grinding agent composed of polymers and/or copolymers having a specific viscosity of between 0.3 and 0.8 and obtained by treatment, using one or several solvents, of a polymer and/or copolymer resulting from polymerization and/or copolymerization of acrylic and/or vinyl monomers comprising acid groups whose active acid sites are partially or completely neutralized to a degree of neutralization of 40 to 60%, including terminals, of the active acid sites using a neutralizing agent containing magnesium ions, and a degree of neutralization reaching 60% using a neutralizing agent containing sodium ions is disclosed. A procedure for grinding in an aqueous suspension using said agent, as well as aqueous suspensions produced using said procedure and their applications to the fields of weight fillers, paper coating, paints, and plastics is also disclosed.

2. 5,693,707, Dec. 2, 1997, Liquid absorbent composition for nonwoven binder applications; John Tze-Chiang Cheng, et al., **524/556, 558, 560** [IMAGE AVAILABLE]

US PAT NO: 5,693,707 [IMAGE AVAILABLE]

L9: 2 of 31

**ABSTRACT:**

An aqueous polymer composition comprising 10 to 40 wt % of a polymer in water, the polymer consisting essentially of 20-90 wt %  $\alpha$ .. $\beta$ ..-ethylenically unsaturated carboxylic acid monomer, 10-80 wt % one or more softening monomers, the aqueous composition being adjusted to pH 4-6 with alkali metal hydroxide or alkaline earth metal hydroxide and further containing 0.1 to 3 wt % zirconium crosslinking salt. Such aqueous compositions can be applied to nonwoven and woven substrates to make superabsorbent products.

3. 5,661,213, Aug. 26, 1997, Curable aqueous composition and use as fiberglass nonwoven binder; Charles Thomas Arkens, et al., **524/555, 556** [IMAGE AVAILABLE]

US PAT NO: 5,661,213 [IMAGE AVAILABLE]

L9: 3 of 31

**ABSTRACT:**

This invention relates to a formaldehyde-free curable aqueous composition containing a polyacid, a polyol and a phosphorous-containing accelerator. The composition may be used as a binder for heat resistant nonwovens such as nonwovens composed of fiberglass.

4. 5,658,981, Aug. 19, 1997, Thermoreversible thickener; Tatsuya Ohsumi, **524/555; 526/260, 263, 265** [IMAGE AVAILABLE]

US PAT NO: 5,658,981 [IMAGE AVAILABLE]

L9: 4 of 31

**ABSTRACT:**

A thermoreversible thickener comprising a water-soluble copolymer containing as constituent monomer at least 50% by weight of a vinyl carboxylic ester of a cyclic amine or a non-cyclic amine with at least 5 carbons with an alkylene oxide added thereto. The thickener, with a transition temperature which can be easily controlled according to the

purpose of application such as coating, rolling oil, adhesives or inks, has a characteristic such that heating the aqueous solution thereof up to a temperature above the transition temperature causes rapid thickening of the solution.

5. 5,576,370, Nov. 19, 1996, Polymer scale preventive agent containing a condensation product of a hydroxynaphthalene; Toshihide Shimizu, et al., 524/413; 427/230; 524/430, 431, 510, 557; 526/62 [IMAGE AVAILABLE]

US PAT NO: 5,576,370 [IMAGE AVAILABLE]

L9: 5 of 31

**ABSTRACT:**

A polymer scale preventive agent for use in polymerization of a monomer having an ethylenically unsaturated double bond, comprising an alkaline solution containing (A) a condensation product of (A-1) a hydroxynaphthalene compound and (A-2) an aldehyde compound, and (B) an inorganic colloid. This agent is used for forming a coating on the inner wall, etc. of a polymerization vessel. Such a vessel is effective in preventing polymer scale deposition, not only in the liquid-phase region but also in the vicinity of the interface between the gas and liquid phases in the vessel, and useful in producing a polymer that shows very few fish eyes and good whiteness when formed into sheets or the like.

6. 5,569,702, Oct. 29, 1996, Grinding and/or dispersing agent containing polymers and/or copolymers partially neutralized by magnesium for aqueous suspensions of mineral substances, to be used in pigmentary applications; Jean-Bernard Egraz, et al., 524/547, 556 [IMAGE AVAILABLE]

US PAT NO: 5,569,702 [IMAGE AVAILABLE]

L9: 6 of 31

**ABSTRACT:**

A grinding agent containing polymers and/or copolymers partially neutralized by magnesium, for aqueous suspensions of mineral substances to be used in pigmentary applications is disclosed. A grinding agent composed of polymers and/or copolymers having a specific viscosity of between 0.3 and 0.8 and obtained by treatment, using one or several solvents, of a polymer and/or copolymer resulting from polymerization and/or copolymerization of acrylic and/or vinyl monomers comprising acid groups whose active acid sites are partially or completely neutralized to a degree of neutralization of 40 to 60%, including terminals, of the active acid sites using a neutralizing agent containing magnesium ions, and a degree of neutralization reaching 60% using a neutralizing agent containing sodium ions is disclosed. A procedure for grinding in an aqueous suspension using said agent, as well as aqueous suspensions produced using said procedure and their applications to the fields of weight fillers, paper coating, paints, and plastics is also disclosed.

7. 5,543,443, Aug. 6, 1996, Denture stabilizing compositions; Jayanth Rajaiah, et al., 523/120; 522/148; 523/116, 118; 524/28, 31, 45, 55, 261, 267, 377, 522, 557; 525/100, 101, 102, 207, 328.9, 366, 474, 477, 478, 479; 526/279; 528/15, 26, 31, 32, 33, 374 [IMAGE AVAILABLE]

US PAT NO: 5,543,443 [IMAGE AVAILABLE]

L9: 7 of 31

**ABSTRACT:**

Disclosed are denture adhesive compositions possessing improved aesthetics and comprising a component which provides for easy removal of the adhesive from the denture and a hydrophilic powder.

8. 5,534,586, Jul. 9, 1996, Grinding and/or dispersing agent containing polymers and/or copolymers partially neutralized by magnesium for aqueous suspensions of mineral substances, to be used in pigmentary applications; Jean-Bernard Egraz, et al., 524/547, 556 [IMAGE AVAILABLE]

**ABSTRACT:**

A grinding agent containing polymers and/or copolymers partially neutralized by magnesium, for aqueous suspensions of mineral substances to be used in pigmentary applications is disclosed.

A grinding agent composed of polymers and/or copolymers obtained by polymerization and/or copolymerization of acrylic and/or vinyl monomers containing acid groups, and in which the active acid sites are completely or partially neutralized to a degree of 40% to 60%, including terminals, using a neutralizing agent containing magnesium ions, and to a degree of up to 60% using a neutralizing agent containing monovalent ions is disclosed.

A procedure for grinding in an aqueous suspension using said agent, as well as the aqueous suspensions produced using said procedure and their applications to the fields of weight fillers, paper coating, paints, and plastics is also disclosed.

9. 5,427,587, Jun. 27, 1995, Method for strengthening cellulosic substrates; Charles T. Arkens, et al., 8/116.1, 116.4, 120, 127.1; 524/538, **556** [IMAGE AVAILABLE]

US PAT NO: 5,427,587 [IMAGE AVAILABLE]

L9: 9 of 31

**ABSTRACT:**

This invention relates to a method for strengthening a cellulosic substrate by treating the substrate with a formaldehyde-free curable aqueous composition and curing the composition. The cellulosic substrates include, for example, paper oil- and air-filter stock, rayon nonwoven wipes, cellulosic laminating stock, cotton woven fabrics, and wood flakes suitable to be consolidated into flakeboard.

10. 5,380,769, Jan. 10, 1995, Reactive ink compositions and systems; Donald R. Titterington, et al., 523/161; 347/96; 524/272, 321, **556**; 525/329.9, 330.1, 330.5, 342 [IMAGE AVAILABLE]

US PAT NO: 5,380,769 [IMAGE AVAILABLE]

L9: 10 of 31

**ABSTRACT:**

Reactive ink compositions of the present invention utilize at least two reactive components, a base ink component and a curing component, that are applied to a receiving substrate separately. The base ink component includes an ink carrier, a compatible colorant, and a cross-linkable constituent, and the curing component is a cross-linking agent. Upon exposure of the base ink component to the curing component, at least a portion of the ink is cross-linked to provide a printed image that is durable and abrasion-resistant.

11. 5,362,798, Nov. 8, 1994, Low-formaldehyde latex binder; Peter C. Hayes, **524/558**; 428/507, 511; 442/164, 165, 168; 524/522, 523, **560**; 526/316 [IMAGE AVAILABLE]

US PAT NO: 5,362,798 [IMAGE AVAILABLE]

L9: 11 of 31

**ABSTRACT:**

A latex binder which has very low or nil amounts of aldehyde such as formaldehyde is made utilizing a compound having the formula: ##STR1## wherein R.<sup>1</sup> is generally an alkyl having from 1 to 6 carbon atoms, with methyl being preferred; wherein R.<sup>2</sup> and R.<sup>3</sup>, independently, is preferably hydrogen, or allyl, or an alkyl having from 1 to 12 carbon atoms, or an alkyl-substituted aromatic having from 7 to 15 carbon atoms, wherein R.<sup>4</sup> is an alkylene having from 1 to 4 carbon atoms, with ethylene being preferred; and wherein R.<sup>5</sup> is hydrogen or an alkyl having from 1 to 4 carbon atoms, with methyl being preferred. The latex binder is generally an emulsion or latex copolymer made from at least one

or more conjugated dienes having a total of from 4 to 10 carbon atoms with butadiene being preferred and one or more vinyl-substituted aromatics having from 8 to 14 carbon atoms, with styrene being preferred. The amount of the above formulation compound is generally from at least 0.05 to about 7 parts by weight based upon 100 parts by weight of the one or more conjugated dienes and the vinyl-substituted aromatic monomers. The latex binder is generally free of crosslinking agents, has good stability, and can be used to bind a paper-coating composition to a cellulose substrate, or to bind nonwoven fibers together. The latex binder generally contains 10 parts or less by weight of formaldehyde per million parts by weight and desirably contains nil, that is, no detectable amounts of formaldehyde therein, even after extended periods of time. e.g., 28 days.

12. 5,241,026, Aug. 31, 1993, Polylactones of poly-.alpha.-hydroxyacrylic acid; Werner Amati, et al., 526/229; 524/401, 456, 558; 526/240, 292.95, 318.3; 528/271, 354, 361 [IMAGE AVAILABLE]

US PAT NO: 5,241,026 [IMAGE AVAILABLE]

L9: 12 of 31

**ABSTRACT:**

The invention relates to the stabilization of alkaline solutions of peroxide bleaching compounds using, as stabilizing agent, a water-soluble poly-.alpha.-hydroxyacrylic acid salt which in the sodium salt form has an average molecular weight Mw from 2000 to 10,000 and to the preparation of such a salt.

13. 5,124,384, Jun. 23, 1992, Transparent caulk containing fumed silica; Joel E. Goldstein, 524/169, 114, 188, 262, 296, 492, 555, 560, 575.5, 925, 926 [IMAGE AVAILABLE]

US PAT NO: 5,124,384 [IMAGE AVAILABLE]

L9: 13 of 31

**ABSTRACT:**

In a sealant composition comprising a polymer latex, filler, plasticizer, silane adhesion promoter, and fumed silica, the improvement which comprises as the plasticizer a C.<sub>sub.1</sub>-C.<sub>sub.8</sub> alkyl aryl phthalate, an N-(C.<sub>sub.1</sub>-C.<sub>sub.8</sub>)alkyl arylsulfonamide, or mixtures thereof.

14. 5,110,859, May 5, 1992, Polymers, their production and uses; Peter Flesher, et al., 524/503, 557; 525/57, 60 [IMAGE AVAILABLE]

US PAT NO: 5,110,859 [IMAGE AVAILABLE]

L9: 14 of 31

**ABSTRACT:**

Novel polyvinyl alcohols include, in the polymeric backbone, vinyl units containing pendant hydrophobic groups. The polymers are made by hydrolysis of corresponding polyvinyl acylates under conditions to avoid hydrolysis of the pendant hydrophobic groups from the polymer. These groups are preferably bonded into the polymer as allyl ether units. The hydrophobic units act as internal plasticizers in films or other shaped articles formed from the polymers and, in particular, gives significant benefit in viscosity and other rheology characteristics of aqueous compositions formed from the polymer.

15. 5,034,451, Jul. 23, 1991, Water-soluble binder and hot-melt binder for ceramics molding; Taku Tanaka, et al., 524/557, 401, 404, 413, 420, 428, 430, 431, 432, 433, 436; 525/60 [IMAGE AVAILABLE]

US PAT NO: 5,034,451 [IMAGE AVAILABLE]

L9: 15 of 31

**ABSTRACT:**

This invention provides a water-soluble binder and a hot-melt binder for ceramics molding, said binder being composed of a polyvinyl alcohol-based copolymer containing (meth)allyl group-containing nonionic monomer units

or nitrogenous group-containing nonionic monomer units.

16. 4,950,698, Aug. 21, 1990, Composition for selective placement of polymer gels for profile control in thermal oil recovery; Paul Shu, et al., 523/130; 524/108, 323, 346, 557, 803; 525/58, 142 [IMAGE AVAILABLE]

US PAT NO: 4,950,698 [IMAGE AVAILABLE]

L9: 16 of 31

**ABSTRACT:**

A composition for closing pores in a formation following a steam-flooding enhanced oil recovery process. The composition comprises an aqueous temperature activated gellable mixture. This mixture is comprised of water, water dispersible polymers, phenolic compounds, and aldehyde producing compounds. Polymers which can be utilized herein include polyvinyl alcohol, polyacrylamide and poly(acrylamide-coacrylamido-2-methylpropane sulfonate). Phenol is the phenolic compound of choice. At a formation temperature greater than 300.degree. F., trioxane, the preferred aldehyde producing compound decomposes to yield formaldehyde which reacts with phenol to form phenolic resin in situ. The resin gels the polymer and forms a solid gel in a heated zone of the formation.

17. 4,933,383, Jun. 12, 1990, Fast setting starch-based corrugating adhesive having fully hydrolyzed cold water insoluble polyvinyl alcohol component; Thomas O. Murdock, et al., 524/52; 156/328; 524/47, 48, 53, 557 [IMAGE AVAILABLE]

US PAT NO: 4,933,383 [IMAGE AVAILABLE]

L9: 17 of 31

**ABSTRACT:**

Corrugating adhesives free of incompatibility problems with a fully hydrolyzed polyvinyl alcohol comprise a major portion of water, starch, strong base, a boric acid compound and a fully hydrolyzed water soluble polyvinyl alcohol composition.

18. 4,916,178, Apr. 10, 1990, Stable solutions of poly-.alpha.-hydroxyacrylic acid salts; Werner Amati, et al., 524/401, 456, 558; 526/229, 240, 292.95, 318.3 [IMAGE AVAILABLE]

US PAT NO: 4,916,178 [IMAGE AVAILABLE]

L9: 18 of 31

**ABSTRACT:**

The invention relates to the stabilization of alkaline solutions of peroxide bleaching compounds using, as stabilizing agent, a water-soluble poly-.alpha.-hydroxyacrylic acid salt which in the sodium salt form has an average molecular weight Mw from 2000 to 10,000 and to the preparation of such a salt.

19. 4,868,228, Sep. 19, 1989, Grinding agent based upon neutralized acrylic polymers and/or copolymers for aqueous suspensions of coarse mineral materials for pigments applications; Olivier Gonnet, et al., 523/333; 106/447, 465, 487; 423/430; 524/425, 556; 525/330.2; 526/240 [IMAGE AVAILABLE]

US PAT NO: 4,868,228 [IMAGE AVAILABLE]

L9: 19 of 31

**ABSTRACT:**

Grinding agent based upon neutralized polymers and/or copolymers for an aqueous suspension of coarse mineral materials for applications in pigments consisting of acid acrylic polymers and/or copolymers which are entirely neutralized by at least one neutralizing agent having a monovalent function and at least one neutralizing agent having a polyvalent function.

20. 4,780,500, Oct. 25, 1988, Water retention aids; Joseph V. Sinka, et

## ABSTRACT:

Copolymers of (1) from about 80% to about 98% by weight of acrylic acid and (2) from about 2% to about 20% by weight of itaconic acid and having a weight average molecular weight of between about 100,000 to about 800,000 and which are at least water dispersible are useful as retention aids for paper coating compositions.

21. 4,645,789, Feb. 24, 1987, Crosslinked carboxyl polyelectrolytes and method of making same; Shmuel Dabi, 524/379; 442/118, 121; 521/97, 149; 524/389, 556, 559, 560; 525/375; 604/372 [IMAGE AVAILABLE]

## ABSTRACT:

Crosslinked water absorbent carboxylic polyelectrolytes and articles made therefrom are provided. The polyelectrolytes are crosslinked using a di- or tri-functional aziridine crosslinking agent.

22. 4,554,307, Nov. 19, 1985, Water soluble polymers and dispersions containing them; David Farrar, et al., 524/425; 106/447, 461, 465; 423/430; 507/118, 119, 121; 524/445, 446, 447, 497, 555, 556 [IMAGE AVAILABLE]

## ABSTRACT:

Pigment dispersions contain, as dispersing agent novel water soluble polymers containing acid groups, preferably polyacrylic acid or copolymers of polyacrylic acid with AMPS, having polydispersity below 1.5 and molecular weight in the range about 1,000 to about 5,000.

23. 4,507,422, Mar. 26, 1985, Water soluble polymers and dispersions containing them; David Farrar, et al., 524/425, 445, 446, 447, 497, 555, 556 [IMAGE AVAILABLE]

## ABSTRACT:

Pigment dispersions contain, as dispersing agent novel water soluble polymers containing acid groups, preferably polyacrylic acid or copolymers of polyacrylic acid with AMPS, having polydispersity below 1.5 and molecular weight in the range about 1,000 to about 5,000.

24. 4,263,244, Apr. 21, 1981, Process for spinning regenerated cellulose fibers containing an alloying polymer; Thomas C. Allen, et al., 264/168, 191; 524/36, 556 [IMAGE AVAILABLE]

## ABSTRACT:

A regenerated cellulose fiber containing an alloying polymer of acrylic acid or methacrylic acid, or a copolymer containing acrylic and methacrylic acid moieties or an alkali metal or ammonium salt thereof or other anionic alloying polymers or copolymer is prepared by a process wherein the alloying polymer is mixed with a viscose solution of known unreacted sodium hydroxide concentration, the sodium hydroxide concentration in the resulting mixture is increased to compensate for any loss in concentration due to neutralization and/or dilution effects by the addition of the alloying polymer to the viscose. Increasing the sodium hydroxide concentration greater than that required to restore the concentration to the original level has resulted in dramatic increases in

absorbency. The resulting viscose solution is extruded into a spin bath in which the sulfuric acid concentration is reduced so that the resulting fibers will have at least 90% of the crimp of a fiber produced from the viscose solution without alloying polymer or copolymer.

26. 4,132,695, Jan. 2, 1979, Absorbent articles and methods for their preparation; Nelson D. Burkholder, **524/547, 556** [IMAGE AVAILABLE]

US PAT NO: 4,132,695 [IMAGE AVAILABLE]

L9: 25 of 31

**ABSTRACT:**

Water absorbent articles, made from solutions of carboxylic polyelectrolytes, together with methods for their preparation, and a composition useful to make said articles are disclosed. The articles are cured and/or crosslinked with polyamido-polyamine epichlorohydrin adducts by heating and/or removing substantially all of the solvent from the precursor composition.

The absorbent articles are useful as surgical sponges, diapers, tampons, meat trays, bath mats and the like.

26. 4,073,995, Feb. 14, 1978, Acid modified polyvinyl acetate textile sizes; James C. Baatz, et al., 442/108; 427/175, 389.9, 394; **524/547, 526/287, 304; 528/287, 303** [IMAGE AVAILABLE]

US PAT NO: 4,073,995 [IMAGE AVAILABLE]

L9: 26 of 31

**ABSTRACT:**

Acid modified vinyl acetate interpolymers containing 2-acrylamido-2-methylpropanesulfonic acid and their use as textile sizes. The interpolymers comprise from about 64.5 to about 95.8 weight percent of vinyl acetate, from about 4 to about 9.5 weight percent of acrylic acid, from about 0.2 to about 1 weight percent of 2-acrylamido-2-methylpropanesulfonic acid and from about 0 to about 25 weight percent of an ethylenically unsaturated monomer selected from the group consisting of alkyl acrylates, dialkyl maleates, and dialkyl fumarates. The interpolymers are prepared preferably by latex polymerization. The textile size solutions are formed by dissolving the interpolymers in dilute aqueous bases or in an organic solvent, and can be used advantageously in combination with polyvinyl alcohol and starches. The sizes demonstrate excellent adhesion to spun polyester and spun blends of polyester and natural fibers and are readily removed by aqueous scouring solvents.

27. 4,065,414, Dec. 27, 1977, Polyion complex and polyion complex film; Toru Seita, et al., 524/108; 210/644, 650; 522/112; 524/113, 173, 205, 234, 235, 360, 364, 389, 401, 419, 422, 423, 429, 436, 438, **548, 555; 526/263, 293, 310, 317.1** [IMAGE AVAILABLE]

US PAT NO: 4,065,414 [IMAGE AVAILABLE]

L9: 27 of 31

**ABSTRACT:**

A crosslinkable polyion complex is prepared by reacting a polycation polymer having an ethylenic double bond at a terminal position in the repeating unit of the polymer with a polyanion polymer. A polyion complex film is prepared by dissolving the crosslinkable polyion complex in a solvent mixture of water-organic solvent-acid, base or salt and then forming a film by casting or coating the solution on a substrate.

28. 4,012,352, Mar. 15, 1977, Polyvinyl alcohol microgels; Alden J. Deyrup, **524/557; 162/135; 525/61** [IMAGE AVAILABLE]

US PAT NO: 4,012,352 [IMAGE AVAILABLE]

L9: 28 of 31

**ABSTRACT:**

Polyvinyl alcohol microgels which comprise stable fluids comprising water

and about 0.05 to 10% by weight of polyvinyl alcohol partially crosslinked with tetravalent titanium ions, said microgels being derived from polyvinyl alcohol which has a Hoepppler viscosity of about 4 to 150 centipoises and in which at least about 50 mole percent of the monomeric units are vinyl alcohol units, said partially crosslinked polyvinyl alcohol and water having a Brookfield viscosity of about 1.15 to 2000 centipoises, said viscosity being at least about 15% greater than the viscosity of the aqueous polyvinyl alcohol solution from which the microgel is derived, are useful as sizes for paper and paperboard, in paper and paperboard coatings, as warp sizes for textile fibers, as adhesives, and as soil and dust stabilizers.

29. 3,980,663, Sep. 14, 1976, Absorbent articles and methods for their preparation from crosslinkable solutions of synthetic carboxylic polyelectrolytes; James R. Gross, 524/389, 391, **556, 560**; 525/329.6, 330.4, 359.2, 385; 604/372 [IMAGE AVAILABLE]

US PAT NO: 3,980,663 [IMAGE AVAILABLE]

L9: 29 of 31

**ABSTRACT:**

Water swellable absorbent articles, made from carboxylic polyelectrolytes, together with methods for their preparation, and a composition useful to make said articles are disclosed. The articles are crosslinked by heating and/or removing substantially all of the water from the precursor composition.

The absorbent articles are useful as surgical sponges, diapers, tampons, meat trays, bath mats and the like.

30. 3,940,356, Feb. 24, 1976, Ice release agents consisting of pseudo-plastic compositions of crosslinked polyacrylic acid in water-polyglycol mixture; Peter G. Byrnes, 524/388; 106/13; 252/70; 523/169; 524/389, **556** [IMAGE AVAILABLE]

US PAT NO: 3,940,356 [IMAGE AVAILABLE]

L9: 30 of 31

**ABSTRACT:**

Ice release agents are formulated from alkylene glycols having two to three carbon atoms, water, an alkanol and a salt of crosslinked polyacrylic acid.

31. 3,839,307, Oct. 1, 1974, PROCESS OF PRODUCING POLYVINYL ALCOHOL MICROGELS; John Joseph Schmifg, 525/61; **524/557**; 525/60 [IMAGE AVAILABLE]

US PAT NO: 3,839,307 [IMAGE AVAILABLE]

L9: 31 of 31

**ABSTRACT:**

Polyvinyl alcohol microgels which comprise stable fluids comprising water and about 0.05 to 10 percent by weight of polyvinyl alcohol partially crosslinked with tetravalent titanium ions, said microgels being derived from polyvinyl alcohol which has a Hoepppler viscosity of about 4 to 150 centipoises and in which at least about 50 mole percent of the monomeric units are vinyl alcohol units, said partially crosslinked polyvinyl alcohol and water having a Brookfield viscosity of about 1.15 to 2000 centipoises, said viscosity being at least about 15 percent greater than the viscosity of the aqueous polyvinyl alcohol solution from which the microgel is derived, are useful as sizes for paper and paperboard, in paper and paperboard coatings, as warp sizes for textile fibers, as adhesives, and as soil and dust stabilizers.

=> chitosan  
L1 1500 CHITOSAN  
=> polyacrylic acid  
17081 POLYACRYLIC  
402032 ACID

L2 12493 POLYACRYLIC ACID  
(POLYACRYLIC(W)ACID)

=> 11 and 12  
L3 260 L1 AND L2  
=> absorbent  
L4 34659 ABSORBENT  
=> 13 and 14  
L5 36 L3 AND L4  
=> d 15 1-36 cit ab

1. 5,624,685, Apr. 29, 1997, High polymer gel and vascular lesion embolizing material comprising the same; Toru Takahashi, et al., 424/488; 252/315.3, 315.4; 424/484, 487; 514/944 [IMAGE AVAILABLE]

US PAT NO: 5,624,685 [IMAGE AVAILABLE]

L5: 1 of 36

ABSTRACT:

The improved vascular lesion embolizing material comprises a high-polymer gel capable of absorbing water in an amount of 10 ml/g and more. The high-polymer gel is preferably such as is produced by first permitting a solution containing a water-soluble high polymer to be precipitated in a solution containing polyvalent cation, said high polymer having a plurality of monovalent anionic functional groups, and then immersing the resulting precipitate in a salt solution. The material will swell upon contact with blood and is capable of embolizing a focal lesion in a blood vessel without causing any adverse effects on the living body. The swell time can be shortened if the embolizing material is made of a high-polymer gel that has been treated with a salt solution after precipitation.

2. 5,624,415, Apr. 29, 1997, Reduction of skin irritation and resistance during electrotransport; Michel J. N. Cormier, et al., 604/290, 20 [IMAGE AVAILABLE]

US PAT NO: 5,624,415 [IMAGE AVAILABLE]

L5: 2 of 36

ABSTRACT:

An electrotransport delivery device utilizing reservoir buffering at a select pH ranges in order to reduce skin irritation and skin resistance is provided. Cathodic reservoirs are buffered to a pH of less than about 4, preferably to a pH in the range of about 2 to 4, while anodic reservoirs are buffered to a pH above about 4, preferably to a pH in the range of about 4 to 10. Another electrotransport delivery device utilizes a potassium sensor to monitor potassium efflux from the skin. Potassium efflux above a certain predetermined level has been found to be a precursor to skin irritation/erythema. Operation of the device is modified (eg, terminated) when the predetermined potassium efflux level is sensed.

3. 5,582,587, Dec. 10, 1996, Iontophoretic delivery device and method of hydrating same; J. Richard Gyory, et al., 604/20; 607/153 [IMAGE AVAILABLE]

## ABSTRACT:

A dry-state iontophoretic drug delivery device (10, 30) is provided. The device has drug and electrolyte reservoirs (15, 16) which are initially in a non-hydrated condition. In one embodiment of the invention, a sealed liquid-containing pouch (21, 22) is provided in each electrode assembly (8, 9). Water or other liquid (20) is released from the pouch (21, 22) by pulling a tab (27, 28) attached to a portion (25, 26) of the pouch (21, 22) which is capable of being torn or ripped in order to hydrate the drug and electrolyte reservoirs (15, 16) and activate the device (10, 30). In another embodiment, the device (30) is held in a package (32). The device (30) has pouches (21, 22) which release their liquid contents automatically upon removal of the device (30) from the package (32). In yet another embodiment, the device (40) is held in a package (42) having a compression zone (46). The pouches (21, 22) must be moved through the compression zone (46) when removing the device (40) from the package (42). Compression causes the pouches (21, 22) to rupture and release the hydrating liquid (20).

4. 5,578,598, Nov. 26, 1996, Polyelectrolyte complex antibacterial agent in antibacterial material; Koji Abe, et al., 514/255, 561, 642, 643 [IMAGE AVAILABLE]

## ABSTRACT:

An antibacterial agent characterized by containing a polyelectrolyte complex prepared by reacting a cationic polymer containing N.sup.+ atoms in repeating units thereof and an anionic polymer containing --COO.sup.--, --SO<sub>3</sub>.sup.--, or --PO<sub>3</sub>.sup.-- groups in repeating units thereof, and an antibacterial material carrying the above polyelectrolyte complex on a carrier.

5. 5,543,270, Aug. 6, 1996, Molded article for photographic photosensitive material, molding method and package; Mutsuo Akao, et al., 430/347; 206/316.1, 316.2, 389, 416, 455, 578; 428/349, 408; 430/496, 501 [IMAGE AVAILABLE]

## ABSTRACT:

A molded article for a photographic photosensitive material formed of a resin composition comprising of (a) 50 wt. % or more of a rubber-containing aromatic monovinyl resin having a melt flow index of 3 to 40 g/10 minutes, a bending elastic modulus of 20,000 kg/cm.sup.2 or more and a Vicat softening point of 78.degree. C. or more and containing 1 to 12 wt. % of a rubber material, (b) 0.1 to 10 wt. % of a light-shielding material, and (c) 0.01 to 20 wt. % of at least one of a lubricant and an antistatic agent. The molded article is excellent in physical strength, photographic properties, injection moldability and the like.

6. 5,536,644, Jul. 16, 1996, Particle separation method; Edwin F. Ullman, et al., 435/7.25; 209/5, 214; 210/222, 695, 704, 705, 710; 435/7.92, 7.93, 7.94, 261; 436/520, 526, 529, 534, 829 [IMAGE AVAILABLE]

## ABSTRACT:

A method is disclosed for separating a substance from a liquid medium. The method comprises combining the liquid medium containing the substance with magnetic particles under conditions for non-specific chemical binding of the magnetic particles. Thereafter, the medium is subjected to a magnetic field gradient to separate the particles from the medium. The preferred non-specific binding is achieved as the result of charge interactions between the particles usually by means of a polyionic reagent. The method of the invention has particular application to the separation of cells and microorganisms from aqueous suspensions and also to the determination of an analyte in a sample suspected of containing the analyte. The analyte is a member of a specific binding pair (sbp). The sample is combined in an assay medium with magnetic particles and a sbp member complementary to the analyte. Magnetic or non-magnetic particles capable of specific binding to the analyte or its complementary sbp member must be included in the assay medium. The combination is made under conditions for non-specifically aggregating the magnetic particles or coaggregating the magnetic and non-magnetic particles when non-magnetic particles are present. The assay medium is subjected to a magnetic field gradient to separate the aggregated particles from the medium. Then, the medium or the particles are examined for the presence or amount of the analyte or an sbp member, the binding of which is affected by the presence of the analyte.

7. 5,533,972, Jul. 9, 1996, Iontophoretic delivery device and method of hydrating same; J. Richard Gyory, et al., 604/20; 206/440; 607/153 [IMAGE AVAILABLE]

## ABSTRACT:

A dry-state iontophoretic drug delivery device (10, 30) is provided. The device has drug and electrolyte reservoirs (15, 16) which are initially in a non-hydrated condition. In one embodiment of the invention, a sealed liquid-containing pouch (21, 22) is provided in each electrode assembly (8, 9). Water or other liquid (20) is released from the pouch (21, 22) by pulling a tab (27, 28) attached to a portion (25, 26) of the pouch (21, 22) which is capable of being torn or ripped in order to hydrate the drug and electrolyte reservoirs (15, 16) and activate the device (10, 30). In another embodiment, the device (30) is held in a package (32). The device (30) has pouches (21, 22) which release their liquid contents automatically upon removal of the device (30) from the package (32). In yet another embodiment, the device (40) is held in a package (42) having a compression zone (46). The pouches (21, 22) must be moved through the compression zone (46) when removing the device (40) from the package (42). Compression causes the pouches (21, 22) to rupture and release the hydrating liquid (20).

8. 5,533,971, Jul. 9, 1996, Reduction of skin irritation during electrotransport; Joseph B. Phipps, 604/20, 290, 890.1; 607/115 [IMAGE AVAILABLE]

## ABSTRACT:

An electrotransport delivery device utilizing reservoir buffering at a

select pH ranges in order to reduce skin irritation and skin resistance is provided. Cathodic reservoirs are buffered to a pH of less than about 4, preferably to a pH in the range of about 2 to 4, while anodic reservoirs are buffered to a pH above about 4, preferably to a pH in the range of about 4 to 10. Another electrotransport delivery device utilizes a potassium sensor to monitor potassium efflux from the skin. Potassium efflux above a certain predetermined level has been found to be a precursor to skin irritation/erythema. Operation of the device is modified (eg, terminated) when the predetermined potassium efflux level is sensed.

9. 5,496,933, Mar. 5, 1996, Super-absorbents and a process for their preparation; Heike Kelkenberg, 536/20; 525/54.3; 536/124, 127; 604/358, 367, 374, 375, 376 [IMAGE AVAILABLE]

US PAT NO: 5,496,933 [IMAGE AVAILABLE]

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ABSTRACT:

\*\*Chitosan\*\* \*\*absorbent\*\* is prepared by reacting pulverized \*\*chitosan\*\* suspended as a powder in an organic solvent with an acid and then isolating solid \*\*chitosan\*\*-acid reaction product.

10. 5,457,093, Oct. 10, 1995, Gel formulations containing growth factors; John K. Cini, et al., 514/12, 21; 530/399 [IMAGE AVAILABLE]

US PAT NO: 5,457,093 [IMAGE AVAILABLE]

L5: 10 of 36

ABSTRACT:

Gel formulations containing polypeptide growth factors having human mitogenic or angiogenic activity are provided. The gel formulations are useful for topical or incisional wound healing for cutaneous wounds, in the anterior chamber of the eye and other ophthalmic wound healing. The gel formulations also comprise a water soluble, pharmaceutically or ophthalmically compatible polymeric material for providing viscosity within various ranges determined by the application of the gel. The gel formulations provide controlled release and increased contact time of the growth factor to the wound site.

11. 5,445,609, Aug. 29, 1995, Electrotransport agent delivery device having a disposable component and a removable liner; Gary A. Lattin, et al., 604/20; 607/149 [IMAGE AVAILABLE]

US PAT NO: 5,445,609 [IMAGE AVAILABLE]

L5: 11 of 36

ABSTRACT:

An electrotransport drug delivery device (1) including a reusable component (2), a disposable component (4), and a removable liner (8) temporarily separating the mating surfaces of the components (2,4) during alignment and assembly of the components (2,4). At least one of the components (2,4) has an adhesive mating surface (11) facing the removable liner (8). Also disclosed are a disposable assembly (4) for an electrotransport device (1) and a method for assembling reusable and disposable components (2,4), the components (2,4) of the electrotransport device assembly (1) are adhesively mated.

12. 5,429,762, Jul. 4, 1995, Cooling agent; Koichi Kitahara, et al., 252/70; 62/4 [IMAGE AVAILABLE]

## ABSTRACT:

A cooling agent which cools by an endothermic reaction resulting from the dissolving of crystals of inorganic salts water, the salts crystallizing at about room temperature by supplying heat. The cooling agent comprises a mixture of (i) a sodium phosphate salt, (ii) a sodium ammonium phosphate salt or an ammonium phosphate salt, and (iii) water. The cooling agent is produced in a manner which avoids the conglomeration of the crystals, which was a difficulty in the art. Moreover, the cooling agent of the present invention can be used repeatedly. When a nucleating agent, a highly water \*\*absorbent\*\* polymer or a thickener is added to the cooling agent, the precipitation of the crystals occurs in a still finer and stabler state. The cooling agent can be used in a cooling pillow having a desirable cooling property and a soft and agreeable touch, which offers comfort with safety and which is free from conglomeration of crystals, even after a long period of time.

13. 5,427,778, Jun. 27, 1995, Gel formulations containing growth factors and acrylamide polymer; Amy L. Finkenaur, et al., 424/78.08, 94.1; 514/21 [IMAGE AVAILABLE]

## ABSTRACT:

Gel formulations containing polypeptide growth factors having human mitogenic or angiogenic activity are provided. The gel formulations are useful for topical or incisional wound healing for cutaneous wounds, in the anterior chamber of the eye and other ophthalmic wound healing. The gel formulations also comprise a water soluble, pharmaceutically or ophthalmically compatible polymeric material for providing viscosity within various ranges determined by the application of the gel. The gel formulations provide controlled release and increased contact time of the growth factor to the wound site.

14. 5,420,197, May 30, 1995, Gels formed by the interaction of polyvinylpyrrolidone with \*\*chitosan\*\* derivatives; Donald H. Lorenz, et al., 525/54.3; 424/426, 486; 514/55, 772.7, 777, 944; 523/122; 524/27; 536/20 [IMAGE AVAILABLE]

## ABSTRACT:

A composition includes a stable gel of neutralized \*\*chitosan\*\* and poly(N-vinyl lactam), the poly(N-vinyl lactam) having a K value of at least about 60 and mole equivalents of acid groups above about 1.4 from ring-opened pyrrolidones. The composition may also include a substrate and various additives incorporated with the gel. A method for making the gel includes mixing the \*\*chitosan\*\* and poly(N-vinyl lactam) in aqueous solution and curing. Products include wound packings, wound dressings, burn dressings, drug delivery dressings, cosmetic face masks and cosmetic wrap dressings.

15. 5,385,543, Jan. 31, 1995, Iontophoretic delivery device and method of hydrating same; Ronald P. Haak, et al., 604/20; 607/151 [IMAGE AVAILABLE]

ABSTRACT:

A dry-state iontophoretic drug delivery device (10, 20) is provided. The device has drug and electrolyte reservoirs (15, 16) which are initially in a non-hydrated condition. In one embodiment of the invention, a passageway (21, 22) is provided through the backing layer (13) and the electrode layer (11, 12) of both the donor electrode assembly (8) and the counter electrode assembly (9). Water or other liquid can be introduced through these passageways (21, 22) in order to hydrate the drug and electrolyte reservoirs (15, 16) and activate the device (10). In another embodiment of the device (20), the drug and electrolyte reservoirs (15, 16) are initially separated from their respective electrodes (11, 12). After the reservoirs (15, 16) are hydrated, they are placed in electrical contact with their respective electrodes (11, 12). By joining the reservoir (15, 16) to the electrode (11, 12) after hydration occurs, delamination problems are reduced.

16. 5,360,415, Nov. 1, 1994, Anti-infective catheter; Yasunori Yabushita, et al., 604/265 [IMAGE AVAILABLE]

US PAT NO: 5,360,415 [IMAGE AVAILABLE]

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ABSTRACT:

An anti-infective catheter on which a layer of a water absorbing polymer is formed. Since the layer of the water absorbing polymer swells by absorbing body fluid in subcutaneous tissue, space between the inserted catheter and its peripheral skin moiety is filled quickly, thus preventing penetration of pathogens in the living body along the wall of the catheter. The anti-infective catheter of the present invention can be inserted in the living body easily without forming a site for the arrangement of a cuff and can prevent penetration of pathogens immediately after its insertion without affecting peripheral tissue.

17. 5,320,598, Jun. 14, 1994, Iontophoretic delivery device and method of hydrating same; Ronald P. Haak, et al., 604/20, 49; 607/152 [IMAGE AVAILABLE]

US PAT NO: 5,320,598 [IMAGE AVAILABLE]

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ABSTRACT:

A dry-state iontophoretic drug delivery device (10, 70, 80) is provided. The device has drug and electrolyte reservoirs (15, 16) which are initially in a non-hydrated condition. A liquid-containing pouch (21, 22) is provided. In certain embodiments the liquid is contained in breakable capsules within the pouch. Water or other liquid can be released from the capsules in the pouch by squeezing or flexing the pouches (21, 22). Alternatively, the liquid can be released from the pouches (21, 22) using pouch piercing pins (36, 37). The liquid released from the pouches (21, 22) hydrates the drug and electrolyte reservoirs (15, 16) and activates the device. In another embodiment, the device (20, 20a) has liquid-containing gel layers (31, 32) which are initially separated from their respective electrode assemblies (8, 9). Liquid-wicking pathways (27, 28) are provided to carry the liquid from the gel layers (31, 32) to the drug and electrolyte layers (15, 16).

18. 5,314,502, May 24, 1994, Iontophoretic delivery device; Larry A. McNichols, et al., 604/20; 607/62 [IMAGE AVAILABLE]

## ABSTRACT:

An electrically powered iontophoretic delivery device is provided. The device includes a pair of electrode assemblies (41, 43) and a source of electrical power (30) connected thereto. Circuitry (60) is provided including an activation circuit (62) and a power generating circuit (70). Before use, neither the power generating circuit (70) nor the activation circuit (62) draw current from the power source (30). When the device is placed on the body (50) and electrical contact is established between the two electrode assemblies (41, 43), the activation circuit (62) is closed causing the power generating circuit (70) to be activated, thereby activating the device. The circuitry (60) improves the shelf-life of the device by minimizing current drain from the battery (30) before use.

19. 5,310,404, May 10, 1994, Iontophoretic delivery device and method of hydrating same; J. Richard Gyory, et al., 604/20; 607/153 [IMAGE AVAILABLE]

## ABSTRACT:

A dry-state iontophoretic drug delivery device (10, 30) is provided. The device has drug and electrolyte reservoirs (15, 16) which are initially in a non-hydrated condition. In one embodiment of the invention, a sealed liquid-containing pouch (21, 22) is provided in each electrode assembly (8, 9). Water or other liquid (20) is released from the pouch (21, 22) by pulling a tab (27, 28) attached to a portion (25, 26) of the pouch (21, 22) which is capable of being torn or ripped in order to hydrate the drug and electrolyte reservoirs (15, 16) and activate the device (10, 30). In another embodiment, the device (30) is held in a package (32). The device (30) has pouches (21, 22) which release their liquid contents automatically upon removal of the device (30) from the package (32). In yet another embodiment, the device (40) is held in a package (42) having a compression zone (46). The pouches (21, 22) must be moved through the compression zone (46) when removing the device (40) from the package (42). Compression causes the pouches (21, 22) to rupture and release the hydrating liquid (20).

20. 5,298,017, Mar. 29, 1994, Layered electrotransport drug delivery system; Felix Theeuwes, et al., 604/20; 607/149, 152 [IMAGE AVAILABLE]

## ABSTRACT:

An iontophoretic agent delivery device, having a layered structure and peripheral insulation, wherein ion transport occurs through two opposing surfaces of said device. The device is especially suited to agent delivery through body surfaces exposed to body fluids. A method of delivering an agent through a body surface exposed to body fluids is also disclosed.

21. 5,288,289, Feb. 22, 1994, Iontophoretic delivery device and method of hydrating same; Ronald P. Haak, et al., 604/20, 290; 607/153 [IMAGE AVAILABLE]

ABSTRACT:

A dry-state iontophoretic drug delivery device (10, 70, 80) is provided. The device has drug and electrolyte reservoirs (15, 16) which are initially in a non-hydrated condition. A liquid-containing pouch (21, 22) is provided. In certain embodiments the liquid is contained in breakable capsules within the pouch. Water or other liquid can be released from the capsules in the pouch by squeezing or flexing the pouches (21, 22). Alternatively, the liquid can be released from the pouches (21, 22) using pouch piercing pins (36, 37). The liquid released from the pouches (21, 22) hydrates the drug and electrolyte reservoirs (15, 16) and activates the device. In another embodiment, the device (20, 20a) has liquid-containing gel layers (31, 32) which are initially separated from their respective electrode assemblies (8, 9). Liquid-wicking pathways (27, 28) are provided to carry the liquid from the gel layers (31, 32) to the drug and electrolyte layers (15, 16).

22. 5,254,301, Oct. 19, 1993, Process for preparing a sheet of polymer-based foam; Robert W. Sessions, et al., 264/46.2, 46.3, 46.4, 55 [IMAGE AVAILABLE]

US PAT NO: 5,254,301 [IMAGE AVAILABLE]

L5: 22 of 36

ABSTRACT:

A continuous process for the preparation of a polymer-based foam sheet at ambient temperatures wherein the foam is produced from a reaction product capable of curing at ambient temperatures formed by the reaction of a reactant composition comprising a prepolymer, such as an isocyanate-capped polyether, and water, comprising:

- (a) providing a continuous substrate;
- (b) depositing said reaction product onto said substrate;
- (c) compressing said reaction product subjecting said product to at least one compression of a predetermined degree after said reaction product has creamed but prior to the time said reaction product has finally cured; and
- (d) finally curing said reaction product.

23. 5,194,262, Mar. 16, 1993, Encapsulated antiperspirant salts and deodorant/antiperspirants; Marvin E. Goldberg, et al., 424/401, 47, 65, 66, 68, 489, DIG.5 [IMAGE AVAILABLE]

US PAT NO: 5,194,262 [IMAGE AVAILABLE]

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ABSTRACT:

Microencapsulates containing antiperspirant salts, microencapsulates in conjunction with bioadhesives, and antiperspirant/deodorant compositions containing the microencapsulates of the invention.

24. 5,190,533, Mar. 2, 1993, Biodegradable fluid-absorbing structures; William A. Blackburn, 604/367; 428/402, 913; 442/393; 604/358, 378, 385.1 [IMAGE AVAILABLE]

US PAT NO: 5,190,533 [IMAGE AVAILABLE]

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ABSTRACT:

The invention discloses a biodegradable fluid-absorbing structure in which the primary fluid barrier in the structure is a unique utilization of a material in the outer cover of the structure which forms a fluid barrier when exposed to a fluid exuded by an \*\*absorbent\*\* center section

of the structure. The biodegradable fluid-absorbing structure of the invention is suitable for use in a disposable diaper, sanitary napkin, bed pan liner and the like, and is also flushable.

25. 5,158,537, Oct. 27, 1992, Iontophoretic delivery device and method of hydrating same; Ronald P. Haak, et al., 604/20 [IMAGE AVAILABLE]

US PAT NO: 5,158,537 [IMAGE AVAILABLE]

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ABSTRACT:

A dry-state iontophoretic drug delivery device (10, 70, 80) is provided. The device has drug and electrolyte reservoirs (15, 16) which are initially in a non-hydrated condition. A liquid-containing pouch (21, 22) is provided. In certain embodiments the liquid is contained in breakable capsules within the pouch. Water or other liquid can be released from the capsules in the pouch by squeezing or flexing the pouches (21, 22). Alternatively, the liquid can be released from the pouches (21, 22) using pouch piercing pins (36, 37). The liquid released from the pouches (21, 22) hydrates the drug and electrolyte reservoirs (15, 16) and activates the device. In another embodiment, the device (20, 20a) has liquid-containing gel layers (31, 32) which are initially separated from their respective electrode assemblies (8, 9). Liquid-wicking pathways (27, 28) are provided to carry the liquid from the gel layers (31, 32) to the drug and electrolyte layers (15, 16).

26. 5,147,698, Sep. 15, 1992, Pressure sensitive adhesive film article having high moisture vapor transmission rate; Susan M. Cole, 428/41.3, 317.3, 317.5; 602/54, 56; 604/307, 336 [IMAGE AVAILABLE]

US PAT NO: 5,147,698 [IMAGE AVAILABLE]

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ABSTRACT:

A pressure sensitive adhesive article is disclosed for treating a wound or attaching a device or article to the skin. The article comprises a film of pressure sensitive adhesive having dispersed therein a discontinuous gaseous phase contained within voids in the adhesive. The adhesive is formed from the polymerization of a hydrophilic premix and exhibits high moisture vapor transmission and fluid absorbency.

27. 5,076,950, Dec. 31, 1991, Magnetic composition for particle separation; Edwin F. Ullman, et al., 252/62.51R; 210/222, 695; 436/526 [IMAGE AVAILABLE]

US PAT NO: 5,076,950 [IMAGE AVAILABLE]

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ABSTRACT:

A method is disclosed for separating a substance from a liquid medium. The method comprises combining the liquid medium containing the substance with magnetic particles under conditions for non-specific chemical binding of the magnetic particles. Thereafter, the medium is subjected to a magnetic field gradient to separate the particles from the medium. The preferred non-specific binding is achieved as the result of charge interactions between the particles usually by means of a polyionic reagent. The method of the invention has particular application to the separation of cells and microorganisms from aqueous suspensions and also to the determination of an analyte in a sample suspected of containing the analyte. The analyte is a member of a specific binding pair (sbp). The sample is combined in an assay medium with magnetic particles and a

sbp member complementary to the analyte. Magnetic or non-magnetic particles capable of specific binding to the analyte or its complementary sbp member must be included in the assay medium. The combination is made under conditions for non-specifically aggregating the magnetic particles or coaggregating the magnetic and non-magnetic particles when non-magnetic particles are present. The assay medium is subjected to a magnetic field gradient to separate the aggregated particles from the medium. Then, the medium or the particles are examined for the presence or amount of the analyte or an sbp member, the binding of which is affected by the presence of the analyte.

28. 5,065,752, Nov. 19, 1991, Hydrophilic foam compositions; Robert W. Sessions, et al., 602/46, 428/304.4, 317.1 [IMAGE AVAILABLE]

US PAT NO: 5,065,752 [IMAGE AVAILABLE]

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ABSTRACT:

A hydrophilic foam composition comprising the in situ reaction product of an isocyanate-capped polyether prepolymer, a hydrophilic agent capable of absorbing water, an adjuvant comprising an alcohol, a wetting agent, and water.

29. 5,064,653, Nov. 12, 1991, Hydrophilic foam compositions; Robert W. Sessions, et al., 424/445, 404, 484 [IMAGE AVAILABLE]

US PAT NO: 5,064,653 [IMAGE AVAILABLE]

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ABSTRACT:

A hydrophilic foam composition comprising the in situ reaction product of an isocyanate-capped polyether prepolymer, a hydrophilic agent capable of absorbing water, an adjuvant comprising an alcohol, a wetting agent, and water.

30. 5,013,769, May 7, 1991, Method of making a hydrogel-forming wound dressing or skin coating material; Douglas G. Murray, et al., 424/78.06, 484, 486, 488; 523/105, 111; 524/22, 29, 52, 377 [IMAGE AVAILABLE]

US PAT NO: 5,013,769 [IMAGE AVAILABLE]

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ABSTRACT:

The invention disclosed is a hydrogel-forming wound dressing or skin coating material suitable for household and veterinary use, consisting substantially entirely of wound-compatible and skin-compatible ingredients and comprising a first hydrophilic polymer, selected from polymers or copolymers of acrylic acid, polymers or copolymers of methacrylic acid, polymers or copolymers of itaconic acid, polymers or copolymers of maleic acid and polymers or copolymers of 3-butene-1,2,3-tricarboxylic acid, or combinations thereof, a second hydrophilic polymer which is capable of interacting with the first polymer to produce, upon drying, a hydrogel of improved water resistance and film forming properties relative to the first polymer alone and water. This material is film forming and substantially transparent but capable of being made opaque.

31. 5,011,864, Apr. 30, 1991, Water \*\*absorbent\*\* latex polymer foams containing \*\*chitosan\*\* (chitin); Steven F. Nielsen, et al., 521/70, 84.1, 134, 139, 140 [IMAGE AVAILABLE]

## ABSTRACT:

A water \*\*absorbent\*\* latex polymer foam produced by the process of combining a foamed latex polymer product with both a water \*\*absorbent\*\* polymer and chitin and drying that blend to form a foamable latex polymer containing both water \*\*absorbent\*\* polymer and chitin. The latex foams produced by this process are of great use, for example, with wound or surgical dressings.

32. 5,009,224, Apr. 23, 1991, Method for attaching a pressure-sensitive film article having high moisture vapor transmission rate; Susan M. Cole, 602/52; 128/887; 428/315.5; 523/111; 602/56, 900; 604/307, 336 [IMAGE AVAILABLE]

## ABSTRACT:

A method is disclosed for treating a wound or attaching a device or article to the skin using a film of pressure sensitive adhesive having dispersed therein a discontinuous gaseous phase contained within voids in the adhesive. The adhesive is formed from the polymerization of a hydrophilic premix and exhibits high moisture vapor transmission and fluid absorbency.

33. 4,983,385, Jan. 8, 1991, Ointment base; Kenji Hasegawa, et al., 514/772.4, 944, 969 [IMAGE AVAILABLE]

## ABSTRACT:

An ointment base which comprises:

- (a) a hydrogel formed by a water-soluble polymer and a material selected from the group consisting of water, a polyhydric alcohol and a mixture thereof;
- (b) a methacrylate copolymer selected from a group consisting of dimethylaminoethyl methacrylate/methyl methacrylate copolymer, ethyl methacrylate/chlorotrimethylammonium ethyl methacrylate copolymer or a mixture thereof; and
- (c) a solubilizer which dissolves the methacrylate copolymer but is incompatible with water and the polyhydric alcohol, a weight ratio of the methacrylate copolymer to the solubilizer being 1:2-1:25.

34. 4,956,350, Sep. 11, 1990, Wound filling compositions; Deral T. Mosbey, 514/55; 106/162.2; 514/54, 925; 536/20, 114 [IMAGE AVAILABLE]

## ABSTRACT:

Wound filling compositions containing: (a) \*\*chitosan\*\*, (b) at least one compatible hydrocolloid material other than \*\*chitosan\*\*, and (c) water, exhibit a variety of properties desirable for use in filling large wound such as dermal ulcers, yet do not exhibit syneresis. Preferably compositions exhibit antimicrobial activity, wound healing capability, a viscosity suitable to allow them to be applied to and remain in an open wound, and are able to absorb wound exudate.

35. 4,935,147, Jun. 19, 1990, Particle separation method; Edwin F. Ullman, et al., 210/695, 222; 435/2, 261 [IMAGE AVAILABLE]

US PAT NO: 4,935,147 [IMAGE AVAILABLE]

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ABSTRACT:

A method is disclosed for separating a substance from a liquid medium. The method comprises combining the liquid medium containing the substance with magnetic particles under conditions for non-specific chemical binding of the magnetic particles. Thereafter, the medium is subjected to a magnetic field gradient to separate the particles from the medium. The preferred non-specific binding is achieved as the result of charge interactions between the particles usually by means of a polyionic reagent. The method of the invention has particular application to the separation of cells and microorganisms from aqueous suspensions and also to the determination of an analyte in a sample suspected of containing the analyte. The analyte is a member of a specific binding pair (sbp). The sample is combined in an assay medium with magnetic particles and a sbp member complementary to the analyte. Magnetic or non-magnetic particles capable of specific binding to the analyte or its complementary sbp member must be included in the assay medium. The combination is made under conditions for non-specifically aggregating the magnetic particles or coaggregating the magnetic and non-magnetic particles when non-magnetic particles are present. The assay medium is subjected to a magnetic field gradient to separate the aggregated particles from the medium. Then, the medium or the particles are examined for the presence or amount of the analyte or an sbp member, the binding of which is affected by the presence of the analyte.

36. 4,920,158, Apr. 24, 1990, Hydrogel-forming wound dressing or skin coating material; Douglas G. Murray, et al., 523/111; 524/22, 29, 52, 377 [IMAGE AVAILABLE]

US PAT NO: 4,920,158 [IMAGE AVAILABLE]

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ABSTRACT:

The invention disclosed is a hydrogel-forming wound dressing or skin coating material suitable for household and veterinary use, consisting substantially entirely of wound-compatible and skin-compatible ingredients and comprising a first hydrophilic polymer, selected from polymers or copolymers of acrylic acid, polymers or copolymers of methacrylic acid, polymers or copolymers of itaconic acid, polymers or copolymers of maleic acid and polymers or copolymers of 3-butene-1,2,3-tricarboxylic acid, or combinations thereof, a second hydrophilic polymer which is capable of interacting with the first polymer to produce, upon drying, a hydrogen of improved water resistance and film forming properties relative to the first polymer alone and water. This material is film forming and substantially transparent but

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